AMENDMENT TO THE CLAIMS

Please add new claims 17-30 as follows:

17. A radar gauge adapted to sense fluid level in a tank, the gauge comprising:

a radar gauge circuit adapted to receive a transmit frequency and a sample frequency controlling radar transmission and level sampling respectively, the radar gauge circuit generating a level output;

a clock source generating first and second clock frequencies and having a control input setting a first frequency separation between the first and second clock frequencies;

a separation sensing circuit coupled to the clock source and generating an evaluation output as a function of the first frequency separation; and

a controller receiving the evaluation output, the controller having a timer that measures the frequency separation and a control output feeding back to the control input that stabilizes the first separation as a function of timing the evaluation outputs, the controller further having a correction circuit that corrects the level output as a function of the first frequency separation.

18. The gauge of claim 17, and further comprising a circuit sensing a polarity of the sample clock and generating a further evaluation output representative of the polarity.

19. The gauge of claim 17, wherein the further evaluation output is provided to the controller, which controller then uses the further evaluation output to generate, in part, the control input.

20. The gauge of claim 17, wherein the circuit sensing the polarity is embodied on a D-flip flop.

21. The gauge of claim 20, wherein the D flip flop is a 7474 clocked D-flip flop.

22. The gauge of claim 17, wherein the clock source further includes a voltage controlled oscillator (VCO) coupled to the control input.

23. The gauge of claim 17, wherein the separation sensing circuit is embodied on a D-flip flop.

24. The gauge of claim 23, wherein the D-flip flop is clocked 7474 D-flip flop.

25. The gauge of claim 17, and further comprising a divider circuit dividing the first and second clock frequencies and generating the transmit and sample frequencies wherein the transmit and sample frequencies are separated by a second frequency separation and wherein the first frequency separation is higher than the second frequency separation.

26. A method of stabilizing clock generation in a radar gauge adapted to sense fluid level in a tank, comprising:

generating first and second clock frequencies separated from each other by a frequency separation controlled by a control input;

generating a first evaluation output as a function of the frequency separation;

generating a control output feeding back to the control input that stabilizes the separation as a function of the evaluation output;

generating a level output as a function of the stabilized frequency separation, the level output corrected as a function of the frequency separation;

generating an indication of the polarity of the sample clock;

generating the control output as a further function of the evaluation output and the polarity indication; and

correcting the level output as a function of the evaluation output.

27. A radar gauge adapted to sense fluid level in a tank, the gauge comprising:

a radar gauge circuit adapted to receive a transmit frequency and a sample frequency controlling radar transmission and level sampling respectively, the radar gauge circuit generating a level output;

an unstabilized clock generating a first clock frequency;

a controllable oscillator generating a second clock frequency, the oscillator having a control input setting a first frequency separation between the first and second clock frequencies, the transmit and sample frequencies being related to the first and second clock frequencies;

a separation sensing circuit coupled to unstabilized clock and the controllable oscillator, the sensing circuit generating a separation output as a function of the first frequency separation;

a controller coupled to the radar gauge circuit and providing the level output; and

wherein the separation output is operably coupled to the control input such that the first frequency separation is stabilized.

28. The gauge of claim 27, wherein the separation output is operably coupled to the control input through the controller.

29. The gauge of claim 28, and further comprising polarity sensing circuitry coupled to the sample clock and the controller, the polarity sensing circuitry being adapted to sense polarity of the sample clock, and provide a polarity output, and wherein the control input is based, at least in part, upon the first frequency separation and the polarity output.

30. The gauge of claim 29, wherein the controller is adapted to correct the level output as a function of the first frequency separation.